

NORTH AMERICAN SARCOPHAGIDÆ: NEW SPECIES
FROM BRITISH COLUMBIA AND ALASKA.¹

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Sarcophaga savoryi new species.

Male.—Parafrontals and genæ silvery gray pollinose; three rows black cilia behind eyes, lateral verticals absent: third vein with bristles: legs dark, their vestiture short; anterior face of posterior femur with only upper and lower rows of bristles; submesotibial bristle absent; anterior acrostichals present; three pairs posterior dorsoventrals: vestiture of fourth ventral plate erect; posterior margin of fourth notum dull orange or reddish; fifth ventral plate yellowish brown with U-shaped opening on each side of which is a shining pad-like structure; first genital segment with marginal bristles, second dull orange, sub-shining.

Length.— $8\frac{1}{2}$ –11 mm.

Head.—Parafrontals and genæ silvery gray pollinose. Breadth of front at narrowest part about two-fifths eye width; cheek height about two-fifths that of eye. Front prominent; frontal vitta at its narrowest part wider than either parafrontal. Second antennal segment blackish; third about twice length of second; arista plumose two-thirds way to tip, sometimes more. Three rows of black cilia behind eyes. Cheek vestiture black. Gena with scattered small hairs and a few bristly ones near lower eye orbit. Palpi dark.

Chaetotaxy.—Lateral verticals absent; vibrissæ inserted on line with oral margin; about ten pairs of frontals, each row extending slightly below base of second antennal segment and diverging from inner edge of gena.

Thorax.—Mesonotum clothed with short, reclinate bristle-like hairs; vestiture of scutellum more erect and hair-like. Anterior spiracular hairs light colored except basally. Epaulets dark.

Wings.—Bend of fourth vein a right angle; anterior cross-vein more basal than end of first longitudinal; third vein with bristles; costal spine short; section III of costa equal to V and VI; calypters whitish, fringed with white hairs.

Legs.—Dark, vestiture short. Anterior face of posterior femur with only upper and lower rows of bristles; posterior

¹ Contribution from the Entomological Laboratory of the Montana State College, Bozeman, Montana.

face with ventral row on proximal half or two-thirds; femur straight: tibia straight: tarsus not shorter than tibia. Anterior and posterior rows of bristles of middle femur present on proximal half; posterior "comb" present; sub-mesotibial bristle absent; anterior surface with one long and one short bristle and posterior surface with two short bristles, all close to median dorsal ridge.

Chatotaxy.—Anterior dorsocentrals and acrostichals well developed; inner presuturals absent; three pairs posterior dorsocentrals; prescutellar acrostichals strong; scutellar apicals present: three sternopleurals; lower sternopleura with bristles only.

Abdomen.—Clothed above with short bristles, beneath with longer, more erect hair. Vestiture of fourth ventral plate erect. Posterior margin of fourth notum dull orange or reddish. Fifth ventral plate usually well exposed, yellowish brown, with U-shaped opening wider proximally, on each side of which is a shining pad-like structure and posterior to this a "brush" of short bristles.

Chatotaxy.—Second segment without dorsal marginal bristles, third with two.

Genital Segments.—Dull orange, except that first may be brownish anteriorly and dorsally and sometimes whitish pollinose posteriorly: first segment with marginal bristles, scant hairy vestiture posteriorly: second with hairy vestiture longer than that of first. Base of forceps dull orange, bent outward at nearly right angles to prongs, vestiture short; prongs darkened, distal thirds divergent, in profile posterior surface with minute spines; tips bent forward. Accessory plate somewhat drawn out and ending bluntly. Anterior claspers small, with hairs on outer edge near base.

Described from twelve male specimens.

Range.—British Columbia; Savory Island, July 10, 1917; July 2, 4, 7, 8, 1918. (R. S. Sherman): United States: Arizona, Tempe, 4-5-14, D. J. Caffery.

Holotype (male); collection of author.

The holotype was collected on Savory Island on July 5, 1918.

***Sarcophaga apertella* n. sp.**

This species is very similar to *S. savoryi* and differs in the following more essential characters:—parafrontals and genæ dark grayish pollinose, slightly yellowish or brassy; at narrowest part frontal vitta twice width of each parafrontal; arista

plumose scarcely more than half way to tip; four rows of black cilia behind eyes; a few bristle-like hairs on transverse impression: anterior spiracular hairs light colored at tips only: anterior face of posterior femur with three rows of bristles; anterior ventral row of bristles of middle femur complete: second abdominal segment with two or three pairs of lateral marginal bristles (one pair in *savoryi*): fifth ventral plate very similar but more brownish, the opening is much narrower and scarcely, if at all, enlarged proximally, the pad-like structures are blackish and smaller, and the "brushes" are smaller: forceps are uniformly dark colored, prongs bent at right angles to base, in profile more slender, tips more strongly bent forward, minute spines as seen in profile near tips only.

Holotype (male); collection of author.

Described from five male specimens.

Range.—British Columbia, Savory Island, July 3, 4, 5, 1918.
Collector, R. S. Sherman.

The holotype was taken on Savory Island on July 5, 1919.

The above described species are much more closely related than it has been possible to indicate in the drawings of the genital apparatus. The subdivisions of the penes are seen to be remarkably alike if one has an opportunity to examine the actual specimens. Both species are close to *Sarcophaga magna* Aldrich.

Sarcophaga wrangeliensis n. sp.

Male.—Four rows of black cilia behind eyes; upper frontals as long or longer than lower frontals: hairs at fold of calpyters slightly darkened; posterior face of hind femur with ventral row of long slender, almost hair-like bristles; posterior tibia bearded; middle femur without "comb"; anterior acrostichals absent; three pairs posterior dorsocentrals, sometimes a fourth very weak pair behind the first: abdominal nota with hairy vestiture beneath; fourth ventral plate with short, decumbent bristles on posterior central portion; second segment with or without two marginals, when present may be stout or slender: second genital segment dull orange, shining.

Length.—9-10 mm.

Head.—Viewed from front parafrontals and genæ slightly brassy. Breadth of front at narrowest part about one-third eye width; cheek height about one-third that of eye. Front prominent; frontal vitta at its narrowest part about twice width of either parafrontal. Third antennal segment scarcely

twice length of second; arista blackish, plumose for not more than half its length, the plumosity beneath much more scant and about half as long as that above. Four rows of black cilia behind eyes. Cheek vestiture long and hair-like. Gena with a row of hairs near eye orbit and with several bristles below near transverse impression: palpi dark.

Chatotaxy.—Lateral verticals absent; vibrissæ inserted slightly above line of oral margin; about fourteen pairs of frontals, the lower portions of rows widely divergent and extending slightly below base of second antennal segment, the upper bristles (except last) almost as long or longer than lower bristles and scarcely less stout; greater ocellars about as strong as uppermost frontals.

Thorax.—Mesonotum clothed with long, slightly reclinate, slender, almost bristle-like hairs; vestiture of scutellum longer and more erect. Spiracular hairs dark. Epaulets dark.

Wings.—Slightly smoky. Bend of fourth vein a right angle; anterior cross-vein more basal than end of first longitudinal; third vein with bristles; costal spine absent; section III of costa longer than section V; calypters whitish, fringed with white hair, except that those at fold are slightly darkened.

Legs.—Dark. Anterior face of posterior femur with three rows of bristles, those of lower row long, and slender; posterior face with ventral row of quite long slender, almost hair-like bristles: tibia bearded, about same length as tarsus, except for those near median dorsal ridge the anterior face with a single bristle well toward distal end. Middle femur without "comb"; anterior and posterior ventral rows of bristles present, former complete, latter present on distal third and proximal to and slightly above it two long (sometimes three) stout bristles: a few short ones proximally near median ridge; anterior face with a single bristle slightly distal to center; submesotibial bristle absent.

Chatotaxy.—Bristles long and strong. Anterior acrostichals absent, dorsocentrals present, inner presuturals absent; three pairs posterior dorsocentrals, sometimes a fourth very weak pair behind the first, prescutellar acrostichals present, often three intra-alars; scutellar apicals present: three sternopleurals; lower sternopleura with bristles only.

Abdomen.—Vestiture of nota hairy both above and beneath. Fourth ventral plate with short, decumbent bristles on posterior central portion, the bristles longer posteriorly; fifth ventral plate blackish, divided, the inner edges of lamellæ with bristles.

Chatotaxy.—Second segment may be without two dorsal

marginals, they may be present and very weak and decumbent or may be well developed; third segment with two dorsal marginals and three pairs of laterals.

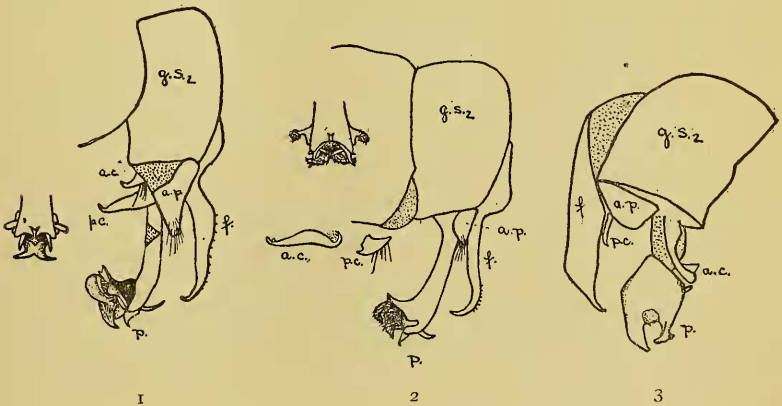
Genital Segments.—First: brownish or black, shining, the posterior portion may be dull orange, vestiture as long as that of second; marginal bristles present; second: dull orange; subglobose; forceps: blackish; broad; vestiture of basal portion long; clothed with hairs about half length of prongs; prongs approximated about two-thirds of length; each prong in profile with edges almost parallel, but the anterior edge slightly sinuate; truncated obliquely forward and ending in tooth, the end third or thereabouts with minute spines.

Holotype (male): collection of author.

Described from six male specimens.

Range.—*British Columbia*; Vancouver, 5-23-18, (holotype) Caulfields, 5-12-18 (R. S. Sherman); *Alaska*; Fort Wrangel (Wickham).

In the four Alaska specimens examined the upper frontal bristles were longer than the lower ones, while in the two British Columbia specimens the upper and lower bristle were of about equal length. This character differs from that in most *Sarcophaga*, the upper frontals usually being much shorter. The pad-like mat of bristles on the four ventral plates is also uncommon. I have seen this character in but one other species, which occurs in India. The hairy vestiture of the dorsal portion of the abdominal nota is also unusual.



- FIG. 1. Genital segments of *Sarcophaga savoryi* n. sp.
FIG. 2. Genital segments of *Sarcophaga apertella* n. sp.
FIG. 3. Genital segments of *Sarcophaga wrangeliensis* n. sp.

List of Abbreviations.

- a. c.—anterior clasper.
p. c.—posterior clasper.
a. p.—accessory plate.
f.—forceps.
p.—penis.
g. s.₂—second genital segment.

NOTES ON THE FUNGOUS BEETLE, CIS CYLINDRICUS DURY.

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The following notes relate mostly to the early stages of *Cis cylindricus* Dury. On February 15, 1920, Mr. Chas. Dury sent me several pieces of the fungus *Polyporus versicolor* which had been collected in San Francisco, California, and which contained numerous specimens of *Cis cylindricus*. A few beetles were mounted and the remainder placed in a jar together with some pieces of uninjured fungus and the whole thing overlooked until May 10 at which time eggs, larvæ and pupæ were secured. The same species was taken from *Polyporus versicolor* collected by Mr. W. J. Chamberlin at Corvallis, Oregon, in March and from *Polyporus hirsutus* collected in Linn Co., Oregon, during October.

All of the larval feeding took place in the context of the fungus, the channels extending in all directions but most of them being parallel with the surface of the fungus on account of the thinness of the context. The eggs were found at the ends of burrows made in the context and pupation also took place in this part of the fungus, the pupæ being found, as a rule, in the basal part. The beetles appeared to feed on both the context and tubes, the only part left untouched being the upper surface of the pileus.